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RIVER DART BIOLOGICAL SURVEY

10th June - 15th July 1968

INTRODUCTION

The survey was undertaken to investigate the invertebrate bottom fauna of the river and to assess the condition of the river with regard to pollution.

ENVIRONMENTAL CONDITIONS

The Dart has two sources on Dartmoor; the East Dart River rising at 1800 feet at ref. SX 609854 and the West Dart River rising at 1750 feet at ref. SX 603816. Both rivers are of a similar nature in this region, flowing through open moorland and consisting of rocky cascades separated by pools and shallow stickles. The two rivers join at Dartmeet and from here onwards the river becomes more unstable, flowing rapidly through a wooded valley. Such conditions persist as far as Buckfast where the river passes through a rocky channel. From Austins Bridge to Totnes the river consists of gravelly stickles interspersed with slower, deeper reaches.

The Dart is acid in its upper reaches the pH ranging from 6.1 - 6.9, but below Dartmeet it becomes neutral or slightly alkaline having a pH of about 7.4 at Totnes. Dissolved oxygen figures are high, usually over 90%. Suspended solids figures are low except in times of spate when the water contains large amounts of peat.

BIOLOGICAL SAMPLING

Biological samples were taken at 18 stations sited at intervals down the length of the river, it was hoped to site each station on a shallow stony stickle and this was achieved in all except 4 cases. Stations 8 and 9 are on rock outcrops and stations 11 and 12 are in deep water reaches. In shallow water samples were obtained by collecting with a pond net for 15 minutes followed by 15 minutes picking over stones. The deep water stations were sampled by sweeping with the pond net. The samples were assessed using the Biotic Index developed by the Trent River Authority. The results are tabulated below:

Station	Grid Ref.	No.of Species	Biotic Index	Remarks
OA U/S Postbridge	SX 625.812	11	IX	
OB U/S Postbridge	SX 639.800	12	IX	
1 Postbridge	SX 647.789	17	X	
2 Bellever	SX 658.773	19	X	
3 Badgers Holt	SX 673.736	17	X	
3A Devonport Leat Weir	SX 608.780	16	X	
3B Two Bridges	SX 608.748	19	X	
3C Prince Hall	SX 626.739	21	X	
3D Huccaby	SX 659.728	18	X	
4 Combestone	SX 673.725	18	X	
5 New Bridge	SX 712.708	13	IX	
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Station	Grid Ref.	No.of Species	Biotic Index	Remarks
6 Holne Bridge	SX 729.706	17	X	
7 Queen of the Dart	SX 734.692	16	IX	
8 Buckfast	SX 743.674	7	VI	Rock Outcrop
9 Austins Bridge	SX 750.660	15	IX	Rock Outcrop
10 Riverford "	SX 773.636	15	VIII	
11 Old Manor	SX 806.633	7		Deep water station
12 Totnes	SX 800.618	12		Deep water station

CONCLUSION

The River Dart is in good condition from its source to Totnes. The reduction in the number of species at certain stations is attributed to physical factors, e.g. instability of the river bed or absence of a suitable substratum. From Dartmeet to Staverton the river bed is very unstable and this undoubtedly limits the invertebrate population.

RIVER DART SAMPLING STATIONS

10th June - 15th July 1968

Station	OA	OB	1	2	3	3A	3B	3C	3D	4	5	6	7	8	9	10	11	12
<u>SPECIES PRESENT</u>	U/S Waterfall U/S Postbridge	U/S Postbridge	Postbridge	Bellever Bridge	Badgers Holt Dartmeet	Devonport Leat Weir	Two Bridges	Prince Hall	Huccaby	Combestone	New Bridge	Holne Bridge	Queen of the Dart	Buckfast Spinning Mills	Austins Bridge	Riverford Bridge	Old Manor	Totnes Weir Pool
Plecoptera																		
Dinocras Cephalotes					2				5	5	1							
Isoperla Grammatica	21	18	20	2	2	20	8	22		4								
Chloroperla Torrentium	21	33	19	16	1	9	3	3	1	1		1						
Leuctra Nigra				11			2	1							1			
Leuctra Hippopus					3		3	1	4	3		1			1			
Leuctra Inermis		4	59	13		3						1	1			1		
Leuctra Moselyi						5												
Leuctra Genuiculata																1		
Leuctra Fusca																1		
Amphinemura Sulcicollis		29	15				3			1								
Protonemura Meyeri				45	26	3	26	64	7	6	29	14		30	2			
Ephemeroptera																		
Baetis Rhodani			19	30	15	1	10	21	5	7	11	3	1	31	3			
Baetis Scambus					1													
Ephemerella Ignita				63	24		5	120	43	60	23	9	6	47	17	35		
Rhithrogena Sp.								1										
Hadrophlebia Fusca													1					
Caenis Rivulorum								1	7									

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Station	OA	OB	1	2	3	3A	3B	3C	3D	4	5	6	7	8	9	10	11	12
	<u>SPECIES PRESENT</u>																	
Crustacea Gammarus Pulex	U/S Waterfall U/S Postbridge	U/S Postbridge	Postbridge	Bellever Bridge	Badgers Holt Dartmeet	Devonport Leat Weir	Two Bridges	Prince Hall	Huccaby	Combestone	New Bridge	Holne Bridge	Queen of the Dart	Buckfast Spinning Mills	Austins Bridge	Riverford Bridge	Old Manor	Totnes Weir Pool
Mollusca Ancylastrum Fluvatile Potamopyrgus Jenkinsi Limnaea Peregere Planorbis Sp. Pisidium Sp.			1										4		3			
Annelida Lumbricidae Lumbriculidae Pisicicola Geometra Glossiphonia Complana Erpobdella Octaculata	4	7	1 9	25	1 2	27	10	1 7	2	1 3		7	4	1	7 1	15 1	70 2	26 1
Tricladida Polycelis Felina Polycelis Nigra Phacocatta Uilta Dendrocoelum Lacteum			2	3	1	1	3	14				2						3
NO. OF SPECIES	11	12	17	19	17	16	19	21	18	18	13	17	16	7	15	15	7	12
BIOTIC INDEX	IX	IX	X	X	X	X	X	X	X	X	IX	X	IX	VI	IX	VIII		